



NACE Standard TM0304-2004
Item No. 21245

Standard Test Method

Offshore Platform Atmospheric and Splash Zone Maintenance Coating System Evaluation

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Foreword

The purpose of this NACE standard is to specify the laboratory test methods to evaluate the performance of liquid-applied maintenance coating systems for the atmospheric zone and splash zone of an offshore platform. It is intended for use by facility owners and coating manufacturers.

This standard was prepared by NACE Task Group (TG) 260 on Offshore Platform Maintenance Coatings (Nonimmersion): Standard Test Methods. This TG is administered by Specific Technology Group (STG) 02 on Coatings and Linings, Protective: Atmospheric. It is also sponsored by STG 33 on Oil and Gas Production—Nonmetallics and Wear Coatings (Metallic). This standard is issued by NACE International under the auspices of STG 02.

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Contents

1. General	1
2. Definitions	1
3. Coating Materials	1
4. Test Solution	2
5. Test Specimens	3
6. Coating Application	4
7. Rust Creepage Resistance Test	5
8. Edge-Retention Test	5
9. Thermal-Cycling Resistance Test	6
10. Seawater Immersion Resistance Test	7
11. Cathodic Disbondment Test	8
12. Flexibility Test	8
13. Impact Resistance Test	9
References.....	9
Figure 1: 90° Angle Aluminum Bar for Edge-Retention Test.....	5
Figure 2: Cross-Section of C-Channel Steel Block for Thermal-Cycling Test.....	6
Table 1: Fingerprinting of Coating Materials.....	2
Table 2: Test Specimen Geometry, Size, Substrate Material, and Minimum Quantity	4

Section 1: General

1.1 This standard test method covers liquid-applied maintenance coating systems for the atmospheric zone and splash zone of an offshore platform. These coating systems are applied by conventional air, airless, or plural-component spray. Other types of coating materials, such as thermal spray metallic and elastomeric or petrolatum tape splash zone coatings, are not covered in this standard.

1.2 Five test methods—rust creepage resistance, edge retention, thermal-cycling resistance, flexibility, and impact strength—are used to evaluate coating systems for atmospheric service. In addition to these five test methods, seawater immersion resistance and cathodic disbondment are also used to evaluate splash zone coating systems. The types of offshore platforms covered by this standard include fixed-leg, semi-submersible, tension-leg, floating production storage and offloading (FPSO), etc.

Section 2: Definitions

Atmospheric Zone: The area on an offshore structure that is above the splash zone.

Coating System: The complete number and types of coats applied to a substrate in a predetermined order.

Cracking (of Coating): Breaks in a coating that extend through to the substrate.

Delamination: The separation of a coat or coats from the previous coat or from the substrate.

Disbondment: The loss of adhesion between a coating and the substrate.

Edge Retention: The ratio of dry-film thickness (DFT) of the entire multicoat coating system at peak to average DFT on both flat surfaces on a sharp angle bar, used as a measure of a coating's ability to retain its film coverage over sharp corners.

Fingerprinting: Method of identifying a coating material through laboratory analyses of coating density, solids content, pigment content, etc. Infrared (IR) spectroscopy is often used in the analyses.

Plural-Component Spraying: An application method that automatically proportions and mixes two or more components of a coating material in the process of delivering them to the spray gun. Plural-component spray

equipment is used to apply coatings with a pot life that is too short to permit mixing and application by conventional air and airless spray equipment.

Pot Life: The elapsed time within which a coating can be effectively applied after all components of the coating have been thoroughly mixed.

Recoat Window: The duration required for a coating to dry or cure before a subsequent coat can be applied successfully.

Room Temperature: An indoor temperature generally between 20 and 25°C (68 and 77°F).

Rust Creepage (Undercutting): The penetration of a coating and the spread of delamination or corrosion from a scribe or holiday in the film.

Shelf Life: The amount of time a coating or other material remains in usable condition.

Splash Zone: The area on an offshore structure that is alternatively dry and wet because of the influence of tides, winds, and waves.

Synthetic Seawater: An aqueous solution containing inorganic salts in proportions and concentrations representative of ocean water (also known as "substitute ocean water").

Section 3: Coating Materials

3.1 General

The selection of the coating system may depend on the weather (ambient temperature, humidity) and recoat window, in addition to the coating performance. The coating system performance shall pass the acceptance criteria specified by each facility owner. If the coating

formulation is changed after the qualification, the coating system shall be requalified in accordance with the latest revision of this standard.

3.2 Required Product Information